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Interim Co-Lead Class Counsel

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA-WESTERN DIVISION

IN RE NJOY, INC. CONSUMER CLASS ACTION LITIGATION

Case No.CV 14-00428-MMM(JEMx)

CLASS ACTION

EXPERT DECLARATION OF JEFFREY E. HARRIS IN SUPPORT OF PLAINTIFFS' MOTION FOR CLASS CERTIFICATION

Judge: Margaret M. Morrow
Date: July 27, 2015
Time: 10:00 a.m.
Place: Courtroom 780

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA-WESTERN DIVISION

IN RE NJOY, INC. CONSUMER CLASS ACTION LITIGATION	Case No. CV 14-00428-MMM (RZx)

EXPERT DECLARATION OF JEFFREY E. HARRIS IN SUPPORT OF PLAINTIFFS' MOTION FOR CLASS CERTIFICATION

May 15, 2015

Qualifications

1. I am a Professor of Economics at the Massachusetts Institute of Technology. I have held the rank of tenured full professor since 1998. As an MIT faculty member, I have regularly taught courses in health economics and microeconomics. In my courses, I have taught students about the economics of the tobacco industry, the health consequences of smoking, and the economic effects of the health consequences of smoking [1]. (Numbers in brackets refer to endnotes.)

2. From 1977 through April 2006, I practiced medicine as a primary care physician at the Massachusetts General Hospital in Boston, Massachusetts. Since February 2006, I have been working as an internist in community health centers in Rhode Island. As a practicing physician, I have had thousands of encounters with patients who smoked cigarettes, as well as patients who suffered from smoking-related diseases.

3. In my capacity as an economist and physician, I have written scholarly articles in peer-reviewed journals, advised numerous government agencies, given invited testimony before U.S. Congressional committees, and served as an invited member of committees of the National Academy of Sciences. In particular, I served as consulting scientific editor, contributor and senior reviewer of the U.S. Surgeon General's reports on smoking and health of 1979-1983, 1986, 1988, 1989, and 1996. During 2004-2007, I was an invited member of the Institute of Medicine's Committee on Reducing Tobacco Use.

4. Among my peer-reviewed articles are: "Smoke Yields of Tobacco-Specific Nitrosamines in Relation to FTC Tar Level and Cigarette Manufacturer: Analysis of the Massachusetts Benchmark Study," *Public Health Report*s (2001); "Cigarette Tar Yields in Relation to Mortality from Lung Cancer in the Cancer Prevention Study II Prospective Cohort, 1982–8," *British Medical Journal* (2004); and "Incomplete Compensation Does Not Imply Reduced Harm: Yields of 40 Smoke Toxicants per Milligram Nicotine in Regular Filter versus Low Tar Cigarettes in the 1999 Massachusetts Benchmark Study," *Nicotine and Tobacco Research* (2004). These articles, in particular, addressed the presence of and health risks of specific toxic components of conventional tobacco cigarettes.

5. I have served a number of times as an expert witness in litigation concerning the economics and health consequences of cigarette smoking. In 1988, I submitted expert

reports and testified at trial in *Cipollone v. Liggett*, a lawsuit brought in federal court on behalf of an individual smoker that was eventually appealed to the U.S. Supreme Court. In 2003, I submitted expert reports and testified at trial in *Price v. Philip Morris*, a class-action lawsuit concerning "light" cigarettes in the state of Illinois. In 2004, I submitted expert reports and testified at trial on behalf of the U.S. Department of Justice in *United States v. Philip Morris*, a federal RICO case brought against tobacco manufacturers. In 2006, I submitted expert reports and gave deposition testimony in *Schwab et al. v. Philip Morris USA*, a federal nationwide class action concerning "light" cigarettes. In 2010, I submitted expert reports and gave deposition testimony in *In Re: Light Cigarettes Marketing and Sales Practices Litigation*, another federal case. In 2011, I submitted expert reports and testified at trial in *Craft et al. v. Philip Morris,* a class-action lawsuit concerning "light" cigarettes in the state of Missouri. During 2012–2013, I submitted expert reports in "light" cigarettes litigation in Arkansas, Hawaii, and Wisconsin. During 2014–2015, I submitted expert reports and gave deposition testimony in *Geanocopoulos v. Philip Morris*, a class-action lawsuit concerning "light" cigarettes in Massachusetts.

6. In the *Price*, *Schwab*, *Craft*, and *Geanocopoulos* cases, in particular, I employed one or both of the survey methods described below in this report to determine the value that consumers attached to alleged safety claims made by manufacturers of "light" cigarettes. In particular, I contributed to the design of the underlying surveys, performed statistical analyses on the results, and interpreted the survey findings in my expert reports.

Attachments to this Report

7. Attached to this report as Exhibit A is my curriculum vitae showing all of my publications within the past ten years. Attached as Exhibit B is a list of all trial and deposition testimony since 2004. Attached as Exhibit C is a list of all materials reviewed in connection with this report.

Compensation

8. I am being compensated at an hourly rate of $800 for all preparation and testimony.

Supervision of Staff at Rubin Anders Scientific

9. Working under my supervision, the staff of Rubin Anders Scientific, Inc. assisted me in the preparation of this report. I am solely responsible for its contents. Rubin Anders staff has been compensated at hourly rates ranging from $225 to $475.

Right to Supplement This Report

10. I understand that discovery is continuing in the current litigation. I reserve the right to supplement this report in the event that I receive additional relevant information.

Definitions and Assumptions

11. I understand that Plaintiffs are seeking certification of two separate statewide classes: the *California class* and the *Florida class*. The California class consists of "All persons, exclusive of Defendant and its employees, who purchased in or from California one or more NJOY E-Cigarettes sold by Defendant during the Class Period." The Florida class consists of "All persons, exclusive of Defendant and its employees, who purchased in or from Florida one or more NJOY E-Cigarettes sold by Defendant during the Class Period." (See [2] at ¶117.)

12. For the California class, the *class period* runs from January 17, 2010 until the date of notice. For the Florida class, the *class period* runs from July 9, 2010 until the date of notice ([2] at ¶¶119–120).

13. In this report, I refer to the California class and Florida class together as the *class* and the persons who meet the foregoing criteria as *class members*. I refer to the corresponding class periods collectively as the *class period*.

14. Plaintiffs' counsel have asked me to assume that beginning in 2007, and continuing during the class period, Defendant NJOY, Inc. "has engaged in a consistent and pervasive marketing campaign that promotes its core marketing message that NJOY E-Cigarettes are known to be safer than traditional tobacco cigarettes or generally safe." ([2] at ¶10) I refer to this core marketing message as the Defendant's *safety claim*.

15. I have been further asked to assume that Defendant's safety claim was promoted by two principal means:

(a) NJOY used, inter alia, print media, television, radio, press releases and its own website to publicize its safety claim. For example, it used print advertisements with

headlines such as "Resolution Solution" and "Try Something New in Bed," and a television commercial stating "Friends Don't Let Friends Smoke." These and NJOY's other advertisements featured such statements as "Smokers finally have a real alternative," "Cigarettes, You've Met Your Match," and in certain instances, "Everything you like about smoking without the things you don't." ([2] at ¶¶60, 69, 70, 90)

(b) NJOY's e-cigarette packaging omitted ingredients and contained misleading partial disclosures concerning the health risks of its products. In particular, NJOY listed nicotine as an ingredient and warned of certain nicotine-related health risks on its packages, but failed to list other ingredients or to disclose their associated health risks, thus creating the impression that nicotine-related risks were the only material health risks of its products ([2] at ¶¶60–65).

Questions Addressed

16. Counsel for Plaintiffs have asked me to address the following questions:

(a) Would a reasonable consumer be willing to pay a price premium for the perceived value of Defendant's safety claim?

(b) If so, are there scientifically reliable methods to measure the price premium that class members paid for the perceived value of the safety claim during the class period?

(c) If so, can these methods be used to calculate class-wide damages?

Summary of Opinions

17. In this report, I conclude that:

(a) A reasonable consumer would be willing to pay a price premium for the perceived value of the Defendant's safety claim.

(b) There are scientifically reliable methods to measure the price premium that class members paid for the perceived value of the safety claim during the class period.

(c) In combination with data on Defendant's sales to class members during the class period, the estimates of the price premium paid for Defendant's safety claim can be used to calculate class-wide damages.

Industry Background

18. E-cigarettes were first available in the United States in 2007 ([3] at 2). Sales of e-cigarettes in the U.S. market tripled from 2012 to 2013, reaching $1.5 billion in 2013 [4]. Although many options exist for consumers, the majority of U.S. e-cigarette sales go to a small number of firms that include both multinational tobacco companies and smaller, private companies [5]. Some of the largest brands include Blu (owned by Imperial Tobacco), Logic, and NJOY. As of December 2012, NJOY was the market leader, controlling about 40% of the U.S. market [6].

19. U.S. e-cigarette users account for approximately 3% of the total population and tend to have lower than average household income ([3] at 4). In total, as of 2013, 8.5% of all adults in the U.S. had tried an e-cigarette [7]. Additionally, by 2012, a total of 1.8 million middle and high school students had tried e-cigarettes, approximately twice the total for 2011 [8].

20. The majority of e-cigarettes are sold through convenience stores (65%), with the bulk of the remainder being sold through grocery stores, tobacco shops, and mass retailers ([9] at 6). However, most large e-cigarette brand owners, including NJOY, also sell their products online through proprietary online stores (such as www.njoy.com). The average retail price of an e-cigarette (the equivalent of approximately 1.25 packs of traditional cigarettes) is from $7 – $10 ([9] at 22). However, some individual e-cigarettes are priced as low as $5 and volume discounts are offered for bulk purchases ([2] at ¶¶30–31).

Would a reasonable consumer be willing to pay a price premium for the perceived value of the Defendant's safety claim?

21. There is compelling evidence that a reasonable consumer would be willing to pay a price premium for perceived value of Defendant's safety claim. This evidence includes professional economic studies as well as Defendant's own research and marketing documents.

Economic Studies

22. Numerous economic studies conducted on a wide variety of products have confirmed that consumers place a positive value on health and safety claims.

23. Economists have used the concept of *willingness to pay* to measure the price premium that consumers would be willing to pay for improved products or product attributes. While the earliest research focused on environmental amenities, such as cleaner air or purer water, economic studies of willingness to pay for privately consumed products are now commonplace. In the field of agricultural economics, for example, studies have established that consumers are willing to pay a price premium for pesticide-free and organically grown food [9-12], so-called cancer-fighting dairy products [13], steam-pasteurized ground beef [14], and eggs produced by cage-free hens [15].

24. Economists have been particularly interested in consumers' valuation of safety claims. Such safety claims play an important economic role in the case of *credence goods*, that is, goods whose attributes cannot be verified by the experience of consumption [16]. For example, consumers can perceive the taste of olive oil, but they cannot readily evaluate whether it is high in tocofenols and carotenoids ([17] at 182). Instead, they rely upon product labels, advertising campaigns, and other media ([17] at 190, [18]). E-cigarettes are a particularly salient example of such a credence good, as reasonable consumers cannot directly evaluate claims that they are safe or safer than conventional tobacco cigarettes.

25. Health and safety claims can be effective not only in increasing consumers' willingness to pay, but also in encouraging consumers to try new products ([18] at 816), as would be the case with consumers of conventional cigarettes trying e-cigarettes for the first time. Health and safety claims can also enhance brand loyalty [19].

26. Consumers' willingness to pay for health and safety improvements depends on the magnitude of health risk reduction. In a study of willingness to pay for reduced pesticide residues in a popular Taiwanese vegetable, researchers found that the price consumers were willing to pay was directly related to magnitude of the claimed reduction in cancer risk [12].

27. There is a growing professional literature on consumers' willingness to pay for tobacco products that are perceived to be less hazardous. In a 1995 survey of adult males carried out in Taiwan, respondents were asked, "There is a new brand of cigarettes in the market (the flavor and other attributes are the same as the one you used to smoke), and its risk of causing lung cancer is fifty percent less than your perception in Question

17 [a prior question in the same survey]. If the price for such a new cigarette is NT$ [New Taiwan dollars] *X* per pack, would you be willing to buy it?" One of seven different prices *X* ranging from NT$35 to NT$60 was then randomly used. The authors found that the average willingness to pay for a pack of such "low lung cancer risk" cigarettes was equivalent to a 152% increase over the average price of cigarettes currently sold on the market [20]. The survey methodology used in this study to value a safety claim in a conventional tobacco cigarette is an example of what I call the *direct method* in the following section of this report.

28. In a 2000 survey of smokers in Sweden [21], respondents were asked, "Imagine that you could buy a pack of cigarettes where all of the cigarettes are risk-free, for the rest of your life. Would you be willing to pay an additional SEK [Swedish Krona] X per pack of 20 cigarettes, where all of them are of the new risk-free type?" One of five possible price premiums (ranging from 3 to 40 SEK) was then used. This study estimated an additional willingness to pay for the new risk-free cigarette between 10 and 41 SEK per pack, equivalent to 29 to 121 percent of the prevailing price of a pack of premium cigarettes [22][23]. This study likewise employed the direct method to assess smokers' willingness to pay for a safety claim in a conventional cigarette.

29. Other studies have used the direct method to gauge smokers' willingness to pay for smoking cessation products [24, 25]. In one study [24], smokers were asked, "Would you be willing to pay US$50 per week (an addition of US$20 per week over the patch alone) for a treatment that doubled the chance you would successfully quit smoking compared to the patch?" Those who responded affirmatively (84%) were then asked, "How much more (above the US$50 per week) would you pay for this same treatment if it also prevented the weight gain you expected to occur from quitting smoking?" Of these respondents, 63% were willing to pay extra if the treatment also prevented weight gain. As noted in an editorial accompanying this study, "Willingness-to-pay surveys are a widely accepted tool in economics for assessing what value consumers attach to products or services not yet on the market." ([26] at 578) This study likewise used the direct method to value health and safety-related claims.

30. Researchers have used the method of *conjoint analysis*, to be described in detail in the next section of this report, to study smokers' demand for nicotine

replacement therapy [27]. In this study, smokers were confronted with different choice situations in which the prices of conventional tobacco cigarettes and nicotine gum were both varied. They found that an increase in the price of conventional tobacco cigarettes enhanced the demand for nicotine gum.

31. In two studies commissioned by Philip Morris International, SKIM Consumer Research used conjoint analysis to assess the impact of a ban on slim cigarettes on illicit trade in Romania [28] and a ban on menthol cigarettes on illicit trade in Poland [29]. In these studies, smokers were surveyed about their choices among cigarettes with different attributes. In the first study, the cigarette attributes were brand name, diameter (slim versus regular) and channel of distribution (street vendors versus regular stores). In the second study, the cigarette diameter was replaced by its flavor (menthol or regular). Respondents were asked to assume that all other attributes of the cigarettes were the same. The authors concluded that elimination of slim cigarettes in Romania (or menthol cigarettes in Poland) from regular stores would increase the demand for such cigarettes from street vendors. While these studies do not assess consumers' valuations of specific safety claims, they do illustrate the use of conjoint analysis to analyze the tradeoffs that smokers make among different cigarette attributes.

32. Two studies have used experimental auctions to assess smokers' valuations of health-related attributes of conventional cigarettes. One auction-based study [30] found that the inclusion of the text "Warning: Smoking Causes Mouth Cancer" on the cigarette pack, along with a pictorial image of mouth cancer, reduced respondents' valuation by 22 percent (that is, by $0.92 per pack on base valuation of $4.18 per pack). The other auction-based study [31] found that smokers would be willing to pay US$1.25– $1.45 for a pack of cigarettes with no nicotine and $1.59–$1.66 for a pack of cigarettes with low levels of nicotine. These two studies employed the so-called BDM experimental auction method [32], in which participants are first given enough money to buy the product of interest and then instructed to make a one-time-only bid for the product. If the participant's bid turns out to exceed a randomly selected price, he gets to purchase the product. So long as participants clearly understand how the BDM auction works, the method is theoretically supposed to motivate participants to bid their true valuation of the product. In practice, however, there has been a continuing concern that participants make

"low ball" bids for the product, just as they would in an ordinary auction [33], a concern not present in conjoint analysis or the direct method.

Defendant's [redacted] Documents

33. [redacted].

34. A[redacted] ([34] at 5770–5771, [35]) [redacted] ([34] at 5799) [redacted].

35. [redacted] ([36] at 5875, 5908) [redacted] ([36] at 5932).

36. As Defendant's internal documents demonstrate, [redacted]

37 [redacted] ([37] at 4).

38. [redacted] ([38] at 1642).

39. [redacted] ([39] at 0838)

40. [redacted] ([40] at 7)

41. Thus, [redacted] together with the findings of the economic studies cited above, [redacted].

Are there scientifically reliable methods to measure the price premium that class members paid for the perceived value of the safety claim?

42. There are two widely accepted, scientifically reliable methods to measure the price premium that class members paid for the perceived value of Defendant's safety claim: *conjoint analysis*, and the *direct method*. Both methods would require surveys of representative members of the class.

Conjoint Analysis

43. Conjoint analysis is a survey technique widely used in the field of marketing to study consumer preferences [41]. The technique has also been employed in the adjudication of a variety of legal disputes, including claims of fraudulent misrepresentation [42]. I have relied upon conjoint analysis in prior litigation involving "light" cigarettes [43]. As noted above, one tobacco manufacturer has commissioned conjoint analyses in its response to proposed government regulations [28, 29].

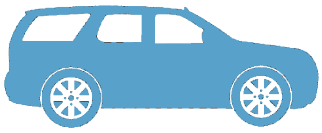
44. Conjoint analysis creates choices that mimic real-world shopping experiences

in order to determine the value that consumers place on individual product attributes. For example, in an analysis of the attributes of a newly purchased automobile, conjoint analysis could be used to determine the value that consumers separately place on leather seating, independent of such attributes as a sunroof or an automatic transmission.

45. In conjoint analysis, survey respondents are asked to make a series of choices between different combinations of product attributes. For example, in the first *choice set*, respondents may be asked whether they would prefer a new SUV car with an automatic transmission and leather seating but no sunroof to a new SUV with an automatic transmission but no leather seating or sunroof. In the second choice set, they may be asked whether they would prefer a new SUV with a manual transmission, leather seating and a sunroof to a new car with a manual transmission, leather seating but no sunroof. In this simple example, there are only three product *attributes* and each of the choice sets has only two product *profiles*. In a full-blown conjoint analysis, there may be five car attributes, each choice set may require respondents to choose between three different SUV profiles, and there may be 20 choice sets. Combining the responses to all of the choice sets, the analyst can then use established statistical methods to estimate the separate value (or *part-worth*) that consumers attach to each product attribute [44].

46. When one of the specific product attributes refers to its purchase price, conjoint analysis can be used to estimate the price premium that consumers would be willing to pay for each of the other product attributes. To continue with the SUV example, the figure on the following page illustrates one of the many choice sets that survey participants would be asked to address in a survey with five attributes: price, sunroof, seating, transmission, and color. In the example, the respondent selects which one of the three product profiles he prefers. The attributes of price and color each have three *levels*, while the remaining attributes have only two levels. If the statistical analysis of the combined survey responses from all choice sets revealed that leather seating had a part-worth that was 1.5 times the corresponding part-worth of the $1,000 price markup, then the estimated price premium for leather seating would be $1,500.

Which one of these three products are you most likely to buy?



$1,000 over base price
Sunroof
Fabric seatcovers
Manual transmission
Blue stock color

$2,000 over base price
No sunroof
Leather seating
Manual transmission
Red stock color

$3,000 over base price
Sunroof
Leather seating
Automatic transmission
Green custom color

47. In the foregoing example, there are 72 distinct product profiles (that is, the number of possible combinations of the five product attributes is $3 \times 2 \times 2 \times 2 \times 3 = 72$) and literally hundreds of thousands of distinct three-product choice sets. Conjoint analysis software permits the analyst to choose a much smaller number of choice sets in order to efficiently determine the part-worth of each attribute [45].

48. The conjoint analysis framework can be readily adapted to the case of e-cigarettes. In order to isolate and measure the value of Defendant's safety claim, the specific product attributes would necessarily include safety and price. Based upon my review of NJOY's internal documents to date [redacted] ([34] at 5794-5796, [36] at 5869, [46] at 3322, [47] at 0954-0956). The results of pretests, to be described below, will help to restrict the list of attributes to those that have the greatest statistical power in explaining participants' choices.

49. As part of their initial instructions, survey respondents would be informed that the e-cigarettes from which they will choose have different attributes, and that each attribute has different levels. Thus, for the battery-life attribute, they may be informed that there are three different levels: low capacity (up to 150 puffs), standard capacity (up to 250 puffs), and high capacity (up to 350 puffs). For the safety attribute, they will be informed that there are two different levels. The first level of safety would be described approximately as follows:

Product Description. "An e-cigarette that provides everything you like about cigarettes without the things you don't."

Warning Package Label. "Contains nicotine, an addictive substance that has been known to cause birth defects and other reproductive harm. Nicotine is addictive and habit forming, and it is very toxic by inhalation, in contact with the skin, or if swallowed. Physical effects of nicotine may include accelerated heart rate and increased blood pressure. This product is not a smoking cessation device."

50. The second level of safety would be described approximately as follows:

Product Description. "This e-cigarette has not been shown to be safe or safer than tobacco cigarettes. It contains carcinogens, toxins and other impurities, some of which are found in the smoke of tobacco cigarettes, that may increase the risk of or cause disease."

Warning Package Label. "Contains nicotine, an addictive substance that has been known to cause birth defects and other reproductive harm. Nicotine is addictive and habit forming, and it is very toxic by inhalation, in contact with the skin, or if swallowed. Physical effects of nicotine may include accelerated heart rate and increased blood pressure. The Food and Drug Administration has not approved this product for smoking cessation or any other use. This product also contains propylene glycol and glycerin, which when heated and inhaled may have a harmful effect on lung capacity. This product also contains nitrosamines (which are known to be powerful carcinogens), toxins and other impurities that may cause disease. This product may require the user to puff more deeply than on a traditional tobacco cigarette. Deeper puffs could be harmful to the user's health."

51. The two levels of safety correspond, respectively, to the product with the Defendant's safety claim and the product without the Defendant's safety claim. However, in the instructions accompanying the conjoint analysis survey, they would be described neutrally to respondents as two alternative safety levels, without specific reference to the NJOY product.

52. With respect to the price attribute, the alternative levels can be expressed either in dollar units or in percentage terms. Expressing prices in percentage terms can mitigate the problem of changing product prices during a class period of 5 years or more. Thus, the first price level can be described as "the price you usually pay (paid) for NJOY." The second level can be described as "20 percent *higher* than the price you

usually pay (paid) for NJOY," while a third price level can be described as "20 percent *lower* than the price you usually pay (paid) for NJOY." The percentage differences with the most explanatory power will be determined from pretesting, to be described below. The resulting price premium attributable to the safety claim will then be computed as a percentage of the purchase price.

53. Since the conjoint analysis survey will include class members from both California and Florida, one would be able to compute the price premium attributable to the Defendant's safety claim separately for each state.

Direct Method

54. In the direct method, representative members of the class are directly asked what they would be willing to pay for additional safety. I have employed the direct method to estimate damages in two class action cases involving alleged consumer fraud in connection with the marketing of "light" cigarettes [48, 49].

55. The direct method is a variant of the "contingent valuation" approach that has been widely employed for decades in the economics profession [50]. As discussed above, the use of valuation surveys to measure consumers' willingness to pay for private and public goods that could improve their personal health has become a well-recognized field of study in health economics.

56. Economists worldwide have used direct surveys to assess consumers' willingness to pay for diabetes risk reduction [51], nursing consultations [52], weight loss programs [53], phototherapy for skin cancer [54], genetic testing for Alzheimer's Disease [55], and symptom relief from migraine headache [56], acid reflux [57] and prostate enlargement [58].

57. Defendant NJOY [redacted] ([36] at 5872–5873, 5904–5906) [redacted]

[redacted] ([59] at 475). [redacted].

58. To calculate the price premium attributable to Defendant's safety claim under the direct method, respondents would first receive the following instruction:

"Suppose you had a choice between two different kinds of e-cigarettes. The two e-cigarettes taste exactly the same, cost the same, and are identical in every way to the e-cigarettes you use (used), except that these two products differ in their safety profiles."

59. Respondents would then be shown the same two different safety profiles described in ¶¶49–50 above. They would then be asked: "Which one of these two e-cigarettes would you buy?" Those who would buy the second e-cigarette, that is, the product without Defendant's safety claim, would be assigned a discount of 0 percent, or equivalently a willingness to pay of 100 percent. All other respondents who would prefer the product with the Defendant's safety claim at the same price would be asked a series of questions to ascertain their willingness to pay for the product without the safety claim:

"Now suppose instead that you could purchase the second e-cigarette at a 10-percent discount, that is, at 90 percent of the price of the first e-cigarette. Which e-cigarette would you buy?"

60. The same question would be posed in 10-percentage-point increments until the percentage discount was sufficiently large to induce the respondent to purchase the second e-cigarette. If the respondent would not purchase the second e-cigarette at any price, he would be assigned a discount of 100 percent, which is equivalent to a willingness to pay of zero percent. At this stage, the use of 10-percentage-point increments remains tentative. The results of pretesting, to be described below, will determine whether more refined (5 percentage point) or coarser (20 percentage point) increments give the most reproducible estimates.

61. The price premium attributable to the Defendant's safety claim would then be computed as the average discount among all respondents. Since the direct method survey would likewise include class members from both California and Florida, one would be able to compute the price premium attributable to the Defendant's safety claim separately for each state.

Survey Research Firm, Respondent Selection and Pretesting

62. To conduct both the conjoint analysis and direct method surveys, I would seek out the services of a reputable, national online survey company with an existing database of potential respondents. Among the possible choices are Qualtrics [60], Applied Marketing Science [61], and Survey Analytics [62]. The selected firm will collaborate in the design of the survey, administer the survey itself, and carry out the data analysis at my direction.

63. For each survey method, the survey company would draw a representative panel of 300–500 adults who have smoked NJOY e-cigarettes within the past year in each state (California and Florida). The exact size of each panel will be determined in consultation with the chosen market research firm. The panels will be drawn from larger Internet-based consumer research panels that are maintained by each firm. Both the conjoint analysis and direct method surveys will obtain relevant demographic information from respondents, including age, sex, education, racial/ethnic group, state(s) of residence during the class period, in order to test whether the respondents are representative of class members and, if necessary, to compute sampling weights to be used in the computation of the price premium attributable to Defendant's safety claim. These sampling weights help to adjust the demographic composition of the survey sample so that it is representative of the class.

64. Before either survey is administered to the full group of respondents, it will be adequately pretested. Pretesting will include small focus group studies to ensure that the instructions are clear and can be followed. Pretesting will also include a preliminary computerized survey to a smaller subsample (approximately 5%) of respondents eligible for the full survey.

65. In addition to ensuring clarity of the survey instruments, pretesting on the smaller subsample of respondents will help to resolve specific survey design questions,

such as the selection of additional product attributes (other than safety and price) to be used in the conjoint analysis, as well as the percentage-point increments in price to be used in the direct method survey. Pretesting on additional small subsamples can be repeated if necessary to ensure reliability.

66. Both the pretest and final surveys may incorporate additional safeguards to ensure the reliability of the responses. For example, the amount of time spent on each question may be recorded to ensure that respondents are not simply answering questions as rapidly as possible. Both surveys may include questions designed to ensure that respondents are paying appropriate attention and not suffering from "response fatigue."

Can scientifically reliable methods be used to calculate class-wide damages?

67. Once the price premium for the safety claim has been calculated, one can use sales data to calculate class-wide damages. That is, one can multiply the price premium, expressed as a percentage of the purchase price, by the total dollar sales to compute the total overpayment by class members during the class period. Total dollar sales can be computed, in turn, from retail scanning data available from Nielsen [63] as well as Internet-based sales data available from the Defendant through discovery.

Nielsen Data on Retail Purchases

68. Nielsen retail scanning data cover all sales through convenience stores, grocery stores, mass merchandisers and Wal-Mart in the states of California and Florida during the respective class periods for each state. The data are broken down by detailed product code and include dollar sales volumes, units sold, and average selling price on a monthly basis. A sample report of NJOY sales is attached as Exhibit D. NJOY sales data are available for purchase from Nielsen.

NJOY Data on Online Sales

69. One major retail distribution channel not covered by the Nielsen scanning data is NJOY's online store, www.njoy.com. Data on total dollar sales, average price and number of units sold in California and Florida during the respective class periods can be ascertained from Defendant through discovery. A sample report is attached as Exhibit E.

End Notes

1. The opinions express in this report are solely those of the author and do not necessarily reflect those of the Massachusetts Institute of Technology or any other organization.

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Signature Page

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Jeffrey E. Harris, May 15, 2015

EXHIBIT A

Exhibit A: Curriculum Vitae of Jeffrey E. Harris

See attached 18-page curriculum vitae.

May 13, 2015

JEFFREY E. HARRIS
Curriculum Vitae

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Current Employment

Professor, Department of Economics, Massachusetts Institute of Technology, 1998–

Education and Training

Ph.D. in Economics, 1975, University of Pennsylvania.

M.D., 1974, University of Pennsylvania.

A.B. (summa cum laude), 1969, Harvard University.

Resident & Clinical Fellow, Medical Services, Massachusetts General Hospital, 1974–1977.

Present and Past Medical Practice

Consulting Physician, Providence Community Health Centers, Providence, RI, 2006–2009, 2012–

Internist, Blackstone Valley Community Health Care, Pawtucket, RI, 2008–2012.

Primary Care Physician, Internal Medicine Associates, Massachusetts General Hospital, Boston, MA, 1977–2006.

Public Service, Honors, Academic and Professional Experience

Jurist, Premio Nacional de Economía Prof. Raúl Trajtenberg (National Economics Prize, Uruguay), 2014.

Keynote Speaker, III Foro Enfermedad Vascular Aterosclerótica. Las Palmas de Gran Canaria. October 2014.

Recipient, MISTI Global Seed Funds, "Smoke-Free Legislation and Heart Attack Incidence in Chile," 2014–2015.

Recipient, Bloomberg Foundation Grant through the Ministerio de Salud Pública, Uruguay, "Evaluation of Uruguay's Tobacco Control Campaign," 2013–

Invited Speaker, International Workshop, Cooperación Sur-Sur para la implementación de medidas del Convenio Marco de Control del Tabaco de la Organización Mundial de la Salud, Montevideo, Uruguay, August 2013.

Public Service, Honors, Academic and Professional Experience

Visiting Professor, Escuela de Salud Pública, Facultad de Medicina, Universidad de Chile, July 2013.

Visiting Professor, Instituto de Economía, Pontificia Universidad Católica de Chile, July 2013.

Visiting Professor, Department of Quantitative Methods for Economics and Management, University of Las Palmas de Gran Canaria, Spain, January 2012.

Visiting Professor, Department of Economics, University of the Republic, Uruguay, November–December 2011,

Fulbright Specialist Award, J. William Fulbright Foreign Scholarship Board, Bureau of Education and Cultural Affairs of the U.S. Department of State, 2011.

Visiting Scholar, Universitat Pompeu Fabra, Department of Economics and Business, Barcelona, October–December 2010.

Keynote Speaker, 10th Anniversary of Revista de Gestión y Clínica Sanitaria, Madrid, November 2009.

Associate Editor, Revista Costarricense de Salud Pública, June 2009–

Visiting Professor, Department of Quantitative Methods for Economics and Management, University of Las Palmas de Gran Canaria, Spain, May-June 2009.

Consultant and Visiting Scholar, Instituto Nacional de Salud Pública, Cuernavaca, Mexico, August 2008.

Huésped Distinguido (Distinguished Guest and Honorary Citizen), City of Salamanca, Spain, May 2008.

Keynote Speaker, XXVIII Meeting of the Spanish Health Economics Association, Salamanca, Spain, May 2008.

Visiting Professor, Department of Economics, University of Costa Rica, January 2008.

Visiting Lecturer, 2 Diplomado en Evaluación Económica de Intervenciones en Salud, Instituto Nacional de Salud Pública, Cuernavaca, Mexico, 2007.

Visiting Professor, Department of Quantitative Methods for Economics and Management, University of Las Palmas de Gran Canaria, Spain, January 2007.

Visiting Lecturer, 7 Diplomado sobre VIH/SIDA: Diagnóstico y respuesta estratégica, Instituto Nacional de Salud Pública, Cuernavaca, Mexico, 2006.

Visiting Lecturer, Pontificia Universidad Católica Madre y Maestra, Internal Medicine Residency Program, Santiago, Dominican Republic, 2006.

Visiting Lecturer, Universidad Tecnológica de Santiago, School of Medicine, Santiago, Dominican Republic, 2006.

Public Service, Honors, Academic and Professional Experience

Consultant, Internal Revenue Service, 2006.

Consultant and Visiting Faculty, Instituto Nacional de Salud Pública, Cuernvaca, Mexico, 2006.

Visiting Professor, Universidad Francisco Marroquin, Guatemala City, Guatemala, 2005.

Member, Institute of Medicine Committee on Reducing Tobacco Use, 2004–2007.

Consultant, Australian Competition and Consumer Safety Commission, 2004.

Consultant, U.S. Department of Justice, 2001–2005.

Expert Testimony, United States v. Philip Morris et al., 2004

Consultant, New Hampshire Association of Counties, 1999.

Consultant, U.S. Department of Veterans Affairs, 1997–1998.

Consultant, Attorney General of Minnesota, 1997.

Consultant, Robert Wood Johnson Foundation, 1996.

Consultant, Office on Smoking and Health, Centers for Disease Control, 1996.

Consultant, Massachusetts Department of Public Health, 1994–2003.

Consultant, National Cancer Institute, Ad Hoc Panel on FTC Cigarette Test Method, 1994.

Consultant, U.S. Federal Trade Commission, Bureau of Advertising Practices, 1994.

Member, Committee on Risk Characterization, National Academy of Sciences, 1994–1996.

Consultant, American Cancer Society, 1992–1994, 1997.

Consultant and Expert Panel Member, Toxicity Testing of Ignition-Resistant Cigarettes, U.S. Consumer Product Safety Commission, 1992–1993.

Member, Expert Panel on Controlling Health Care Costs, U.S. Congressional Budget Office, 1991.

Member, National Advisory Research Resources Council, National Institutes of Health, 1991–1994.

Member, Local Organizing Committee, VIII International Conference on AIDS, 1990–1991.

Visiting Associate Professor, Dept. of Biostatistics, Harvard School of Public Health, 1988–1989.

Advisor to the Director, U.S. Centers for Disease Control, National Household HIV Seroprevalence Survey, 1989.

Consultant, New York City Department of Health, 1988.

Robert Wood Johnson Foundation, Research Grant Award, 1988–1989.

Public Service, Honors, Academic and Professional Experience

Consultant, Attorney General and Department of Health and Welfare, Canada, 1988–1995.

Scientific Advisory Committee, American Foundation for AIDS Research, 1987–1994.

American Cancer Society, Research Grant Award, 1985–1987.

Member, Committee on National Strategies toward Acquired Immunodeficiency Syndrome (AIDS), National Academy of Sciences, Institute of Medicine, 1986.

Consultant, Committee on Complex Mixtures, Board on Toxicology and Environmental Health Hazards, National Academy of Sciences, 1985.

Member, Committee to Study the Prevention of Low Birthweight, Institute of Medicine, National Academy of Sciences, 1983–1985.

Consultant, Committee to Plan a Comprehensive Review of Medical Education, Institute of Medicine, National Academy of Sciences, 1982.

Consultant, Health Effects Institute, 1981–1983.

Consultant, Cooperative Trial of Percutaneous Transluminal Angioplasty, U.S. Veterans Administration, 1981–1982.

Research Associate, National Bureau of Economic Research, 1981–

Consultant, Food and Nutrition Service, National WIC Evaluation, U.S. Dept. of Agriculture, 1981–1984.

Consultant, American Lung Association, 1981.

Member, National Hospice Advisory Committee, 1981–1984.

Consultant, Office of Health and Environmental Research, U.S. Dept. of Energy, 1981.

Consultant and Visiting Scientist, Inhalation Toxicology Research Institute, 1981.

Consultant, Office of Research and Development, U.S. Environmental Protection Agency, 1981.

Associate Editor, Journal of Health Economics, 1981–1989.

Elected to New York Academy of Sciences, 1980.

National Institute on Drug Abuse, Research Grant Award, 1980–1985.

Member, Diesel Impacts Study Committee, Analytic Panel, National Academy of Sciences, 1980–1981.

Research Career Development Award, U.S. Public Health Service, 1980–1985.

Health Sciences Fund, Research Grant Award, 1979.

Editor, Health and Public Policy Series, M.I.T. Press, 1978–1993.

Public Service, Honors, Academic and Professional Experience

Consultant, Health Care Financing Administration, U.S. Department of Health, Education, and Welfare, 1978–1980.

Consultant, National Cancer Institute, U.S. Dept. of Health, Education, and Welfare, 1979.

Consulting Scientific Editor, Contributor, and Senior Reviewer, U.S. Surgeon General's Reports on Smoking and Health, 1979–1983, 1986, 1988, 1989, 1996.

Consultant, Office on Smoking and Health, Office of the Assistant Secretary for Health, U.S. Department of Health, Education, and Welfare, 1978–1980.

Physician Member, Massachusetts Board of Registration and Discipline in Medicine, 1978–1980.

Professor, Harvard University–M.I.T. Division of Health Sciences and Technology, 1998–2008.

Associate Professor, Department of Economics, Massachusetts Institute of Technology, and Harvard University–M.I.T. Division of Health Sciences and Technology, 1980–1998 (tenure since 1982).

Assistant Professor, Department of Economics, Massachusetts Institute of Technology, and Harvard University–M.I.T. Division of Health Sciences and Technology, 1976–1980.

Elected to Alpha Omega Alpha Honor Medical Society, 1974.

Medical Scientist Training Program, National Institutes of Health, 1969–1974.

Elected to Phi Beta Kappa, 1969.

Articles in Peer-Reviewed Journals

Harris JE, Balsa AI, Triunfo P. Tobacco control campaign in Uruguay: Impact on smoking cessation during pregnancy and birth weight. *Journal of Health Economics* 2015; in press. doi: 10.1016/j.jhealeco.2015.04.002.

Beatriz González López-Valcárcel, Vicente Ortún, Patricia Barber, and Jeffrey E. Harris, Importantes diferencias entre Facultades de Medicina. Implicaciones para la Medicina Familiar y Comunitaria. *Atención Primaria* 2013 (Nov 12). doi: 10.1016/j.aprim.2013.08.004.

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Jeffrey E. Harris, Beatriz González López-Valcárcel, Vicente Ortún Rubio, and Patricia Barber Pérez, Specialty choice in times of economic crisis: cross-sectional survey of Spanish medical students. *BMJ Open* 2013; 3:e002051 doi:10.1136/bmjopen-2012-002051.

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Winston Abascal, Elba Esteves, Beatriz Goja, Franco González Mora, Ana Lorenzo, Amanda Sica, Patricia Triunfo, and Jeffrey E. Harris, Tobacco control campaign in Uruguay: a population-based trend analysis. *Lancet* 2012; 380(9853):1575–82 (published online 14-Sep-2012).

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Sergio Bautista-Arredondo, Paola Gadsden, Jeffrey E. Harris, and Stefano M. Bertozzi, Optimizing Resource Allocation for HIV/AIDS Prevention Programs: An Analytical Framework. *AIDS* 2008; 22(suppl 2):S1-S8.

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Jeffrey E. Harris, Incomplete Compensation Does Not Imply Reduced Harm: Yields of 40 Smoke Toxicants per Milligram Nicotine in Regular Filter versus Low Tar Cigarettes in the 1999 Massachusetts Benchmark Study, *Nicotine and Tobacco Research* 2004 (October); 6(5): 797-807.

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Jeffrey E. Harris, Smoke Yields of Tobacco-Specific Nitrosamines in Relation to FTC Tar Level and Cigarette Manufacturer: Analysis of the Massachusetts Benchmark Study, *Public Health Reports* 2001 (July-Aug); 116: 336-343.

Lois Biener, Jeffrey E. Harris, and William Hamilton, Impact of the Massachusetts Tobacco Control Programme: Population Based Trend Analysis. *British Medical Journal* 2000 (August 5); 321: 351–354.

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Jeffrey E. Harris, U.S. Cigarette Manufacturers' Ability to Pay Damages: Overview and a Rough Calculation, *Tobacco Control*, 1996; 5: 292-294.

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Jeffrey E. Harris, Improved Short-Term Survival of AIDS Patients Initially Diagnosed with *Pneumocystis carinii* Pneumonia, 1984 through 1987, *Journal of the American Medical Association* 1990; 263: 397-402.

Jeffrey E. Harris, How Many Doctors are Enough? *Health Affairs* 1986; 5: 73-83.

Jeffrey E. Harris, Diesel Emissions and Lung Cancer (with Comment and Reply), *Risk Analysis* 1983; 3: 83-100, 139-46.

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William H. DuMouchel and Jeffrey E. Harris, Bayes Methods for Combining the Results of Cancer Studies in Humans and Other Species, (with Comment and Rejoinder) *Journal of the American Statistical Association* 1983; 78: 293-308, 313-15.

Jeffrey E. Harris, Increasing the Federal Excise Tax on Cigarettes, *Journal of Health Economics* 1982; 1: 117-20.

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Jeffrey E. Harris, Pricing Rules for Hospitals, *Bell Journal of Economics* 1979; 10: 224-43.

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Jeffrey E. Harris, Ana Inés Balsa, and Patricia Triunfo, Tobacco Control Campaign in Uruguay: Impact on Smoking Cessation during Pregnancy and Birth Weight. *National Bureau of Economic Research, Working Paper* 19878, January 2014.

Jeffrey E. Harris, Ana Inés Balsa, and Patricia Triunfo, Campaña antitabaco en Uruguay: Impacto en la decisión de dejar de fumar durante el embarazo y en el peso al nacer. Departamento de Economía, Facultad de Ciencias Sociales, *Universidad de la República, Uruguay, Documento de Trabajo* No. 01/14, February 2014 [Spanish version of NBER Working Paper 19878]

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Jeffrey E. Harris and Sam Shapiro, Trends in Low Birthweight, in: Institute of Medicine, Committee to Study the Prevention of Low Birthweight, *Preventing Low Birthweight,* Washington, D.C.: National Academy Press, 1985: 94-112, 252-265.

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Other Publications

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Seminars and Presentations

2014

"Tabaquismo: impacto y coste-efectividad de las intervenciones. III Foro Enfermedad Vascular Aterosclerótica. Las Palmas de Gran Canaria. October 15, 2014.

"Crise e direitos sociais: as experiências dos EUA e da Europa." ABRES 2014 - XI Encontro Nacional de Economia da Saúde & VI Encontro Latino Americano de Economia da Saúde. São Paulo, Brasil. September 25, 2014.

"ObamaCare: From the Eye of the Storm." XVII Encuentro de Economía Aplicada, Las Palmas de Gran Canaria, June 5, 2014.

"Campaña anti-tabaco en Uruguay: Impacto en la decisión de dejar de fumar durante el embarazo y en el peso al nacer." Seminario de Microeconomía Aplicada, Instituto de Economía, Pontificia Universidad Católica de Chile, March 16, 2014.

2013

"Resultados de la Política de Combate contra el Tabaco: Estudios de Caso," ("Results of Policies to Combat Tobacco Use: Case Studies"), Taller sobre Cooperación Sur-Sur para la Implementación de Medidas del Convenio Marco de Control del Tabaco de la Organización Mundial de la Salud, Torre Ejecutiva, Montevideo, Uruguay, August 14, 2013.

"Eficiencia versus Equidad en el Sistema de Asignación de las Especialidades Médicas en España: Una Estrategia de Simulación Basada en un Modelo de Elección Discreta" ("Efficiency versus Equity in the System for Assigning Medical Specialties in Spain: A Simulation Strategy Based on a Discrete Choice Model"), Instituto de Economía, Pontificia Universidad Católica de Chile, Santiago, Chile, July 10, 2013.

"Las controversias sobre mamografía: ¿Relevantes a la situación actual en Chile?" ("Controversies over mammography: Are they relevant to the current situation in Chile?") Fundación Educación Popular en Salud (EPES), Santiago, Chile, July 10, 2013.

"Evaluación del Impacto de la Campaña Anti-Tabaco en Uruguay: Implicancias para la Nueva Ley Anti-Tabaco en Chile" ("Evaluation of the Impact of the Anti-Tobacco Campaign in Uruguay: Implications for the New Anti-Tobacco Law in Chile"), Escuela de Salud Pública, Facultad de Medicina, Universidad de Chile, Santiago, Chile, July 9, 2013.

2012

"Reforma Sanitaria en Estados Unidos" ("Healthcare reform in the United States"), V Congreso de Economía de la Salud de América Latina y el Caribe, Montevideo, Uruguay, November 16, 2012.

"Impacto de la Campaña Anti-Tabaco en Uruguay: Un Análisis de Tendencias a Nivel Nacional ("Impact of the anti-tobacco campaign in Uruguay: an analysis of national-level trends"), V Congreso de Economía de la Salud de América Latina y el Caribe, Montevideo, Uruguay, November 16, 2012.

Seminars and Presentations

"La contribución del estudio de tabaco a la disciplina de la economía de la salud" ("The contribution of the study of tobacco to the discipline of health economics"), Complejo Hospitalario Universitario de Canarias, Tenerife, January 27, 2012.

"La contribución del estudio de tabaco a la disciplina de la economía" ("The contribution of the study of tobacco to the discipline of economics"), University of Las Palmas de Gran Canaria, Gran Canaria, Spain, January 19, 2012.

2011

"La Campaña Contra el Tabaquismo: Parte II ¿Qué es la base científica?" ("The anti-tobacco campaign: Part II What is the science base?") Fondo Nacional de Recursos, Montevideo, Uruguay, December 9, 2011.

"¿Por qué no tenemos una vacuna contra el VIH? La ciencia versus la economía" ("Why don't we have a vaccine against HIV? Science versus economics"), Facultad de Ciencias Sociales, Universidad de la República, Montevideo, Uruguay, December 6, 2011.

"La mamografía rutinaria en mujeres de 40 a 49 años: La ciencia versus la política." ("Routine mammography in women aged 40-49 years: Science versus policy") Facultad de Medicina, Hospital Pereira Rossell, Montevideo, Uruguay, December 5, 2011.

"La Campaña Contra el Tabaquismo: Parte I ¿Como se evalúa el impacto?" ("The anti-tobacco campaign: Part I Evaluating its impact") Fondo Nacional de Recursos, Montevideo, Uruguay, November 30, 2011.

"La contribución del estudio de tabaco a la disciplina de la economía de la salud" ("The contribution of the study of tobacco to the discipline of health economics"), Fondo Nacional de Recursos, Montevideo, Uruguay, November 28, 2011.

2010

"Ciencia y política sanitaria: La decisión de no recomendar la mamografía rutinaria en mujeres de 40 a 49 años" ("Science and health policy: The decision not to recommend routine mammography in women aged 40–49") Barcelona, Agència d'Informació, Avaluació i Qualitat en Salut, November 25, 2010.

"La decisión del U.S. Preventive Services Task Force en noviembre 2009 de no recomendar la mamografía rutinaria para las mujeres de 40 a 49 años: El papel de la ciencia en la política sanitaria de los EE.UU." ("The decision by the U.S. Preventive Services Task Force in November 2009 not to recommend routine mammography for women aged 40–49 years: The role of science in U.S. health policy") Valencia, Centro Superior de Investigación en Salud Pública, November 5, 2010.

2009

"¿Por qué no tenemos una vacuna contra el VIH? Y como podemos desarrollar una" ("Why Don't We Have an HIV Vaccine, and How We Can Develop One"), Barcelona, Universitat Pompeu Fabra, Centre de Recerca en Economia i Salut, December 2, 2009.

Seminars and Presentations

"¿Por qué no tenemos una vacuna contra el VIH? Y como podemos desarrollar una" ("Why Don't We Have an HIV Vaccine, and How We Can Develop One"), Madrid, 10o Aniversario de la Revista Gestión Clínica y Sanitaria, November 30, 2009.

"Experimento versus Observación en la Evaluación de la Política Sanitaria: El Caso del Seguro Popular de México" ("Experiment versus Observation in Health Policy Evaluation: The Case of Mexico's Seguro Popular"), University of Las Palmas de Gran Canaria, Gran Canaria, Spain, June 5, 2009.

"Tres Problemas que Conlleva la Reforma Sanitaria del Gobierno de Obama" ("Three Problems with the Obama Health Reform"), University of Las Palmas de Gran Canaria, Gran Canaria, Spain, June 2, 2009.

2008

"La Conducta de Alto Riesgo como una Enfermedad Transmisible" ("High-Risk Behavior as a Transmisible Disease"), Sesión Plenaria, XXVIII Jornadas de Economía de la Salud (Plenary Session, XXVIII Conference of the Association of Health Economics), Salamanca, May 28, 2008.

"El Estancamiento de la Mortalidad Materna en México: ¿El nuevo programa de seguro médico ha tenido algún impacto?" ("The stagnation of maternal mortality in Mexico: Has the new program of medical coverage had an impact?"), Centro Centroamericano de Población (Central American Population Center), University of Costa Rica, San José, Costa Rica, January 30, 2008.

"Evaluación del Impacto del 'Seguro Popular' sobre la Utilización de Servicios Obstétricos en México" ("Evaluation of the Impact of 'Seguro Popular' on the Utilization of Obstretric Services in Mexico"), Círculo de Economistas, Academia de Centroamérica (Circle of Economists, Academy of Central America), San José, Costa Rica, January 29, 2008.

"Por qué no hemos desarrollado una vacuna contra el SIDA?" ("Why haven't we developed a vaccine against AIDS?"), Instituto Costarricense de Investigación y Enseñanza en Nutrición y Salud (INCIENSA) (Costa Rican Institute for Research and Education on Nutrition and Health), Tres Ríos, Costa Rica, January 29, 2008.

2007

"Análisis Econométrico de la Asignación de Residentes Médicos en España, 2003-2005" ("Econometric Análisis of the Allocation of Medical Residents in Spain, 2003-2005"), Centro de Investigación en Economía y Encuestas, Instituto Nacional de Salud Pública (Center for Research in Economics and Surveys, National Institute of Public Health), Cuernavaca, México, July 25, 2007.

"El Papel del Economista en la Formación de la Política Sanitaria" ("The Role of the Economist in the Formation of Health Policy"), College of Physicians, Gran Canaria, Spain, January 30, 2007.

Seminars and Presentations

"Los Modeles Económicos de la Relación Médico-Paciente: ¿Pueden Explicar el Desequilibrio en El Mercado para Médicos en España?" ("Economic Models of the Doctor-Patient Relationship: Can They Explain the Disequilibrium in the Market for Physicians in Spain?"), University of Las Palmas de Gran Canaria, Gran Canaria, Spain, Department of Quantitative Methods for Economics and Management, January 29, 2007.

"El SIDA y la Economía de la Salud: Dos Preguntas, Miles de Respuestas" ("AIDS and Health Economics: Two Questions, Thousands of Answers"), Masters Program in Health Economics and Health Care Management, University of La Laguna, Tenerife, Spain, January 25, 2007.

"Análisis econométrico de tabaquismo entre los alumnos de escuelas secundarias en México, 2005" ("Econometric Analysis of Tobacco Use among Secondary School Students in Mexico, 2005"), University of Las Palmas de Gran Canaria, Gran Canaria, Spain, Department of Quantitative Methods for Economics and Management, January 23, 2007.

2006

"Evaluación del Impacto de Intervenciones" ("Evaluation of the Impact of Interventions"), 7o Diplomado sobre VIH/SIDA: Diagnóstico y respuesta estratégia, Instituto Nacional de Salud Pública, Cuernvaca, México, July 13, 2006.

"Análisis de Costo-Efectividad" ("Cost-effectiveness Analysis"), 7o Diplomado sobre VIH/SIDA: Diagnóstico y respuesta estratégia, Instituto Nacional de Salud Pública, Cuernvaca, México, July 10, 2006.

"Qué ventaja tiene la carga viral sobre el recuento de células CD4 en el manejo de VIH? Vale el costo adicional en los entornos con recursos limitados?" School of Medicine, Universidad Tecnológica de Santiago Santiago, Dominican Republic, June 21, 2006.

Qué ventaja tiene la carga viral sobre el recuento de células CD4 en el manejo de VIH? Vale el costo adicional en los entornos con recursos limitados?" ("What advantages does the viral load have over the CD4 count in the management of HIV? Are these advantages worth the additional cost in settings with limited resources?") Residency Program in Internal Medicine, Pontificia Universidad Católica Madre y Maestra, Hospital Cabral y Báez, Santiago, Dominican Republic, June 21, 2006.

"La discriminación de precios en los medicamentos para tratamiento del SIDA" ("Price discrimination in medications for treating AIDS"), Centro de Investigación en Sistemas de Salud, Instituto Nacional de Salud Pública (Center for Research on Health Systems, National Institute of Public Health), Cuernavaca, México, February 2, 2006.

"Análisis de costo-efectividad de la estrategia de tamizaje del cáncer cervico-uterino: Prueba de VPH versus Papanicoulau" ("Cost-effectiveness of screening strategies for cervical cancer: HPV testing versus the Pap smear"), Centro de Investigación en Salud Poblacional, Instituto Nacional de Salud Pública (Center for Research on Population Health, National Institute of Public Health), Cuernavaca, México, January 31, 2006.

Seminars and Presentations

"Por qué no hemos desarrollado una vacuna contra el SIDA?" ("Why haven't we developed a vaccine against AIDS?"), Centro de Investigación en Sistemas de Salud, Instituto Nacional de Salud Pública (Center for Research on Health Systems, National Institute of Public Health), Cuernavaca, México, January 30, 2006.

Las interacciones sociales asimétricas: El caso de los adolescentes que fuman" ("Asymmetric social interaction: The case of teenage smoking"), Centro de Investigación en Salud Poblacional, Instituto Nacional de Salud Pública (Center for Research on Population Health, National Institute of Public Health), Cuernavaca, México, January 26, 2006.

"El rol de los impuestos en la estrategia de control del tabaquismo: Experiencia en países en desarrollo" ("The role of taxes in tobacco control strategy: The experience of developing countries"), Centro de Investigación en Sistemas de Salud, Instituto Nacional de Salud Pública (Center for Research on Health Systems, National Institute of Public Health), Cuernavaca, México, January 25, 2006.

2005

"Cost-Effectiveness Analysis Comes to the Dermatologist's Office (Without an Appointment)," Invited Address, American Dermatological Association, September 17, 2005.

"¿Qué es la diabetes?" ("What is Diabetes?") Radio Show, FLOR 91.9 FM, Aldea Cruz Blanca, Guatemala, August 18, 2005.

"Los sistemas de salud en los Estados Unidos y en Guatemala" ("Health Care Systems in the United States and Guatemala") Centro de Salud Bárbara, University Francisco Marroquin School of Medicine, Program in Public Health and Community Service, San Juan Sacatapéquez, Guatemala, August 16, 2005.

"Los interacciones sociales asimétricos: El caso de los adolescentes que fuman" ("Asymmetric Social Interactions: The Case of Adolescent Smokers") Faculty of Economic Sciences, University Francisco Marroquin, Guatemala City, Guatemala, August 12, 2005.

"La discriminación de precios en los medicamentos para tratamiento del SIDA" ("Price Discrimination in Medications for Treating AIDS") Faculty of Economic Sciences, University Francisco Marroquin, Guatemala City, Guatemala, August 11, 2005.

"¿Por qué no hemos desarrollado una vacuna contra el SIDA?" ("Why Haven't We Developed a Vaccine against AIDS?") Faculty of Economic Sciences, University Francisco Marroquin, Guatemala City, Guatemala, August 9, 2005.

"Los sistemas de salud en los Estados Unidos y en Guatemala" ("Health Care Systems in the United States and Guatemala") Hospital Universitario Esperanza, Post-Graduate Program in Internal Medicine, University Francisco Marroquin, Guatemala City, Guatemala, August 4, 2005.

Courses Taught at MIT

AIDS in the 21st Century (undergraduate freshman seminar)
Health Economics (undergraduate course and graduate seminar)
Introductory and Intermediate Microeconomics (undergraduate)
Teaching Undergraduate Microeconomics (graduate)
Mathematics for Economists (graduate)
Law and Economics (graduate seminar)
Probability, Statistics and Econometrics (undergraduate)
Current Regulatory Problems in Toxicology (graduate)
Industrial Organization (undergraduate and graduate)
MIT Undergraduate Economics Association Teaching Award, 2001, 2006

Foreign Languages

Numerous professional presentations in Spanish. Drafting of original articles in Spanish.

Expert Testimony

Available upon request.

EXHIBIT B

Exhibit B: Expert Reports and Testimony, 2004–present

2015

Harris JE. Deposition Testimony, *Geanocopolous v. Philip Morris*, 20 Apr 2015.

Harris JE. Rebuttal Report, *Geanocopolous v. Philip Morris*, 13 Mar 2015.

2014

Harris JE. Deposition Testimony, *Geanocopolous v. Philip Morris*, 14 Nov 2014.

Harris JE. Expert Report, *Geanocopolous v. Philip Morris*, 6 Oct 2014.

2013

Harris JE. Expert Report, *Miner v. Philip Morris*, 4 Feb 2013.

2012

Harris JE. Expert Report, *Cabbat v. Philip Morris*, 12 Dec 2012.

Harris JE. Expert Report, *Konkel v. Philip Morris*, 12 Sep 2012.

2011

Harris JE. Trial Testimony, *Craft v. Philip Morris*, 4-5 Oct 2011.

Harris JE. Expert Rebuttal Report in Connection with Plaintiffs' Motion for Class Certification (Confidential), *In Re: Bayer Corp. Combination Aspirin Products Marketing and Sales Practices Litigation*, 20 Jul 2011.

Harris JE. Class Size Estimate, *Craft v. Philip Morris*, 15 Jul 2011.

Harris JE. Trial Testimony, *City of St. Louis v. American Tobacco et al.*, 22-23 May 2011.

Harris JE. Deposition Testimony (Confidential), *In Re: Bayer Corp. Combination Aspirin Products Marketing and Sales Practices Litigation*, 11 Mar 2011.

Harris JE. Rebuttal Expert Report, *Craft v. Philip Morris*, 27 Feb 2011.

Harris JE. Expert Report in Connection with Plaintiffs' Motion for Class Certification (Confidential), *In Re: Bayer Corp. Combination Aspirin Products Marketing and Sales Practices Litigation*, 10 Feb 2011.

2010

Harris JE. Deposition Testimony, *Craft v. Philip Morris*, 11 Oct 2010.

Harris JE. Deposition Testimony, *Craft v. Philip Morris*, 6 Oct 2010.

Harris JE. Expert Report, *Craft v. Philip Morris*, 7 Jun 2010.

Harris JE. Deposition Testimony, *City of St. Louis v. American Tobacco et al.*, 18-20 May 2010.

Harris JE. Affidavit, *In Re: Light Cigarettes Marketing and Sales Practices Litigation*, 30 Mar 2010.

Harris JE. Affidavit, *In Re: Light Cigarettes Marketing and Sales Practices Litigation*, 29 Mar 2010.

Harris JE. Deposition Testimony, *State of Louisiana v. Merck Sharpe & Dohme*, 29 Jan 2010.

Harris JE. Deposition Testimony, *In Re: Light Cigarettes Marketing and Sales Practices Litigation*, 20 Jan 2010.

Harris JE. Affidavit, *City of St. Louis v. American Tobacco et al.*, 11 Jan 2010.

Harris JE. Deposition Testimony, *Craft v. Philip Morris*, 8 Jan 2010.

2009

Harris JE. Expert Report, *State of Louisiana v. Merck Sharpe & Dohme*, 22 Dec 2009.

Harris JE. Expert Report, *In Re: Light Cigarettes Marketing and Sales Practices Litigation*, 6 Dec 2009.

Harris JE. Affidavit, *City of St. Louis v. American Tobacco et al.*, 11 Oct 2009.

Harris JE. Expert Report, *City of St. Louis v. American Tobacco et al.*, 29 Sep 2009.

Harris JE. Deposition Testimony, *State of South Carolina v. Eli Lilly and Company*, 31 Jul 2009.

Harris JE. Expert Report on Off-Label Promotion of Zyprexa: Analysis of South Carolina Call Notes (Confidentail), *State of South Carolina v. Eli Lilly and Company*, 13 Feb 2009.

2008

Harris JE. Expert Report on Off-Label Promotion of Zyprexa: Analysis of Samples of Call Notes in Six States Participating in the Multidistrict Litigation (Confidential), *In re: Zyprexa Products Liability Litigation*, 24 Nov 2008.

Harris JE. Expert Testimony, Class Certification Hearing, *In re: Zyprexa Products Liability Litigation*, 29 Mar 2008.

2007

Harris JE. Expert Report, *Craft v. Philip Morris*, 3 Dec 2007.

Harris JE. Expert Report, *Izzarelli v. R.J. Reynolds*, 14 Sep 2007.

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EXHIBIT C

Exhibit C: Materials Considered

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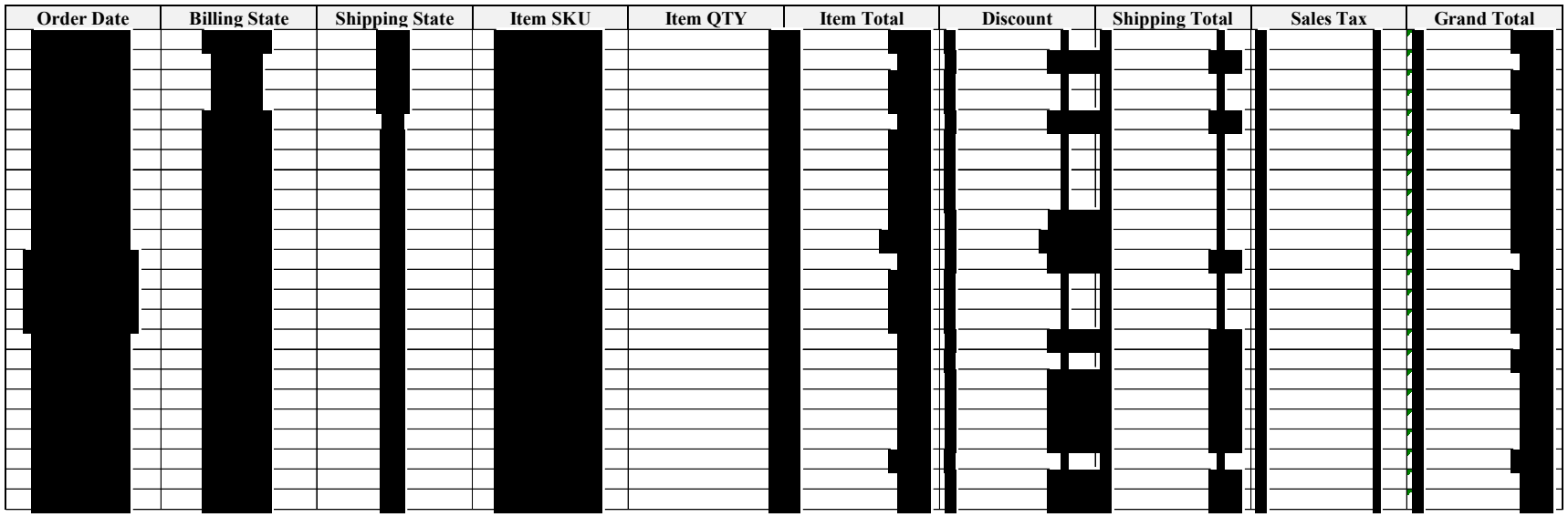
EXHIBIT D

Exhibit D: Sample Report of Nielsen Sales Data

State	Brand	UPC	Time Period	Channel	Sales Dollars	Sales Units	Avg Selling Price
FL	NJOY	061126999907	13 weeks ending 12/24/2011	C-Store	$ 22,882,957.42	9,383,267	$ 2.44
FL	NJOY	061126999100	13 weeks ending 12/24/2011	C-Store	$ 2,675,091.64	1,346,098	$ 1.99
CA	NJOY	061126910802	13 weeks ending 12/24/2011	C-Store	$ 2,485,170.86	343,295	$ 7.24
CA	NJOY	081809400001	13 weeks ending 12/24/2011	C-Store	$ 1,491,195.08	750,887	$ 1.99
CA	NJOY	061126910900	13 weeks ending 12/24/2011	C-Store	$ 1,412,657.34	193,539	$ 7.30
FL	NJOY	007084781116	13 weeks ending 12/24/2011	C-Store	$ 1,018,969.93	502,798	$ 2.03
FL	NJOY	061126910171	13 weeks ending 12/24/2011	C-Store	$ 990,095.00	496,476	$ 1.99
CA	NJOY	081809400002	13 weeks ending 12/24/2011	Grocery	$ 735,302.27	375,123	$ 1.96
CA	NJOY	081809400007	13 weeks ending 12/24/2011	Grocery	$ 708,165.38	104,381	$ 6.78
CA	NJOY	081809400008	13 weeks ending 12/24/2011	Grocery	$ 600,820.26	88,529	$ 6.79
CA	NJOY	007084781117	13 weeks ending 12/24/2011	Grocery	$ 549,593.12	79,720	$ 6.89
CA	NJOY	007084781126	13 weeks ending 12/24/2011	Grocery	$ 515,010.93	253,715	$ 2.03
FL	NJOY	007084781129	13 weeks ending 12/24/2011	Grocery	$ 439,653.40	65,209	$ 6.74
FL	NJOY	061764101285	13 weeks ending 12/24/2011	Wal-Mart	$ 395,390.50	221,532	$ 1.78
CA	NJOY	004900003687	13 weeks ending 12/24/2011	Wal-Mart	$ 382,242.45	198,980	$ 1.92
CA	NJOY	061126942672	13 weeks ending 12/24/2011	Wal-Mart	$ 381,994.72	19,052	$ 20.05
CA	NJOY	081809400014	13 weeks ending 12/24/2011	Wal-Mart	$ 373,648.67	140,579	$ 2.66
FL	NJOY	073951091470	13 weeks ending 12/24/2011	Wal-Mart	$ 372,689.44	178,830	$ 2.08
FL	NJOY	081809400050	13 weeks ending 12/24/2011	Wal-Mart	$ 328,475.02	165,771	$ 1.98
CA	NJOY	007084781124	13 weeks ending 12/24/2011	Wal-Mart	$ 244,386.75	83,133	$ 2.94
CA	NJOY	004900004211	13 weeks ending 12/24/2011	Wal-Mart	$ 220,771.83	35,045	$ 6.30

EXHIBIT E

Exhibit E: Sample Report of NJOY Online Sales Data



Order Date	Billing State	Shipping State	Item SKU	Item QTY	Item Total	Discount	Shipping Total	Sales Tax	Grand Total